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Patent Claims

1. A component having a semiconductor body, in which four
doped regions (1, 3, 4, 5) whose conductivities have
alternating signs are formed one above the other between two
main sides, of which regions
one region, as first base region (1), has a low basic doping
of the semiconductor body, and
a further region, whose conductivity has an opposite sign to
that of the former region, is formed as second base region (4)
in a manner extending as far as one of the main sides and is
provided with a gate electrode (G), which is present on said
main side, in such a way that a channel formed in the second
base region can be controlled, and
the two remaining regions (3, 5) are provided with a source
contact (S), which also makes contact with the second base
region and is applied on the same main side as the gate
electrode, or respectively with a drain contact (D),
in which case a further region, which is doped such that its
conductivity has the same sign as the first base region, is
present as buffer layer (2) between the first base region (1)
and the region provided with the drain contact (D), and
the first base region (1) is dimensioned in such a way, and
the magnitude of the doping of the buffer layer (2) is chosen
in such a way, that, in an operating state in which the
component effects blocking in the direction from the source

contact toward the drain contact, at least in an envisaged range of applied electrical voltages, a space charge zone present in the first base region is formed in a manner extending at least as far as the buffer layer (2),

5 wherein

a further buffer layer (6), which is doped such that its conductivity has the same sign as the first base region, is present between the first base region (1) and the second base region (4), and

10 the magnitude of the doping of the further buffer layer (6) is chosen in such a way that the component effects blocking in the direction from the drain contact toward the source contact in an envisaged range of opposite applied electrical voltages.

15 2. The component as claimed in claim 1,

in which the magnitude of the doping of the further buffer layer (6) is chosen in such a way that, in an operating state in which the component effects blocking in the direction from the drain contact toward the source contact, at least in an

20 envisaged range of applied electrical voltages, a space charge zone present in the first base region (1) is formed in a manner extending at least as far as the further buffer layer

(6).

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